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[54] **METHODS AND APPARATUS FOR GENERATING AND PROCESSING SYNTHETIC AND ABSOLUTE REAL TIME ENVIRONMENTS**

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Related U.S. Application Data

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[52] **U.S. Cl.** ..... **434/307 R**; 434/365; 340/825.06; 364/578; 348/383

[58] **Field of Search** 634/43, 69, 307 R–309, 634/365; 340/825, 6, 825.36, 980; 370/60, 75, 85.2, 93, 34.1, 95.3; 379/59, 60; 455/89; 381/190; 395/127, 135, 152, 154, 155, 161, 156, 806, 807, 173, 326, 761; 364/578; 345/7, 8; 348/53, 115, 39, 383; 359/13, 630

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[57] **ABSTRACT**

A system for generating and processing synthetic and absolute real time remote environments for interaction with a user and her biological senses is comprised of seven modules. These modules store, retrieve and process data to generate an output which interfaces with the system user's biological senses. These modules also track user data to accurately place the user in the generated and processed model. Various embodiments of the system user sensory interface are provided including visual and aural input devices, a three dimensional chamber having interactive tactile output via matrix-addressed, electromechanically operated rods driving a flexible skin and a head mounted sensory interface having a selectable a see through mode and multidimensional sonic arrays.

18 Claims, 34 Drawing Sheets